

What is claimed is:

1. A method of performing a pattern based search, characterized by driving the search with a metric other than step size.

2. The method of claim 1 wherein the metric for driving the search is based on a change in value of an objective function.

3. The method of claim 1 wherein the metric for driving the search is a sensitivity of an objective function to component moves.

4. A method, comprising:

determining the effect of a plurality of moves on a set of components;

and

performing a pattern based search based on said determining.

5. The method of claim 4 wherein said determining includes ranking each of said plurality of moves based on the change each move has on an objective function and ordering said moves from highest to lowest ranking.

6. The method of claim 5 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

7. The method of claim 5 wherein said determining additionally comprises dividing the range between highest and lowest rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

8. The method of claim 7 wherein said assigning is performed according one of a geometric progression based on said rankings and said rankings.

9. The method of claim 4 wherein said determining includes deriving a function that relates moves to changes in an objective function.

10. The method of claim 4 wherein said determining includes determining the non-intersecting volume between an object and itself after applying a move.

11. A method, comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

ordering the moves from those moves having the highest ranking to those moves having the lowest ranking.

12. The method of claim 11 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

13. The method of claim 11 additionally comprising dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

14. The method of claim 13 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings.

15. The method of claim 11 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

16. A method, comprising:
ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and
clustering said moves into intervals based on said ranking.

17. The method of claim 16 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

18. The method of claim 16 wherein said clustering includes dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

19. The method of claim 18 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings.

20. The method of claim 16 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

21. A preprocessing method, comprising:
deriving a function that relates moves to changes in an objective function.

22. The method of claim 21 wherein said deriving includes one of analytically, probabilistically and heuristically deriving.

23. A storage device carrying an ordered set of instructions which, when executed, performs a pattern-based search, characterized by driving the search with a metric other than step size.

24. The device of claim 23 wherein the metric for driving the search is based on a change in value of an objective function.

25. The device of claim 23 wherein the metric for driving the search is a sensitivity of an objective function to component moves.

26. A storage device carrying an ordered set of instructions which, when executed, perform a method comprising:

determining the effect of a plurality of moves on a set of components;
and

performing a pattern based search based on said determining.

27. The device of claim 26 wherein said determining includes ranking each of said plurality of moves based on the change each move has on an objective function and ordering said moves from highest to lowest ranking.

28. The device of claim 27 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

29. The device of claim 27 wherein said determining additionally comprises dividing the range between highest and lowest rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

30. The device of claim 29 wherein said assigning is performed according one of a geometric progression based on said rankings and said rankings.

31. The device of claim 26 wherein said determining includes deriving a function that relates moves to changes in an objective function.

32. The device of claim 26 wherein said determining includes determining the non-intersecting volume between an object and itself after applying a move.

33. A storage device carrying an ordered set of instructions which, when executed, perform a method comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

ordering the moves from those moves having the highest ranking to those moves having the lowest ranking.

34. The device of claim 33 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

35. The device of claim 33 additionally comprising dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

36. The device of claim 33 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings.

37. The device of claim 33 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

38. A storage device carrying an ordered set of instructions which, when executed, perform a method comprising:

ranking each of a plurality of moves on a set of components based on the effect each move has on an objective function; and

clustering said moves into intervals based on said ranking.

39. The device of claim 38 wherein said ranking includes one of analytically, probabilistically and heuristically ranking.

40. The device of claim 38 wherein said clustering includes dividing the range between the maximum and minimum rankings into a plurality of intervals, and assigning each of the moves to one of said intervals.

41. The device of claim 40 wherein said assigning is performed according to one of a geometric progression based on said rankings and said rankings.

42. The device of claim 38 wherein said ranking includes determining the non-intersecting volume between an object and itself after applying a move.

43. A storage device carrying an ordered set of instructions which, when executed, perform a preprocessing method comprising:

deriving a function that relates moves to changes in an objective function.

44. The method of claim 43 wherein said deriving includes one of analytically, probabilistically and heuristically deriving.